

## CHAPTER XIV

### **PROVIDING FOR UPKEEP IN DESIGNING JIGS AND FIXTURES**

The importance of providing for upkeep in the design of the various types of fixtures used in manufacturing work cannot be over-emphasized. In many cases provision for upkeep can be incorporated in the design without increasing the first cost of the fixture to any great extent, while in other instances considerable extra outlay may be necessary. Much depends upon the accuracy required in the finished product and the number of pieces which are to be machined. For example, in gun work, when great quantities of parts are to be produced, no expense is spared in making the fixtures in as durable a manner as possible, and in making provision for the replacement of worn locating points, etc. On machine tool work, however, discretion must be exercised, so that the expense of fixtures may be consistent with the required rate of production and accuracy of the work.

Many factors influence design in this regard. The size and general character of the work determine the type of machine on which the fixture is to be used, and, therefore, the need for stability and strength. The number of pieces to be machined is a factor which must be considered, for it is apparent that a small number does not require any special care to be taken in regard to the matter of upkeep. In drill jig work, the locating points, bushings, and feet may be made so that they can be readily replaced when abuse or wear of these parts tends to cause imperfect work. The probable necessity for replacements is naturally determined by the rate of production that is required. Jigs and fixtures are often handled roughly and they should be constructed to withstand such usage. Milling fixtures are frequently required to stand very heavy cutting so that